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## Introduction: Special Section on Economics of Consumer Search

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Consumer Search

Being surprised about how often prices were dispersed in markets for apparently homogeneous products, Stigler (1961)<sup>1</sup> paved the way for a rich strand of the economics literature in which the information consumers have when they make decisions is the outcome of their own search effort. Since then, the *consumer search* literature has matured to become an essential part of the toolkit an economist needs to master to understand the functioning of markets. Despite the long time that has elapsed since, the consumer search literature is recently more alive than ever before, especially in Industrial Organization. Perhaps the principal reason is that Internet has made it even more palpable that consumer information acquisition via costly search is an essential characteristic of markets and thus cannot be neglected. For a firm, getting the consumer to inspect its product is vital for otherwise a purchase is hard to materialize. This has led firms to reconsider basic pricing principles. The great availability of data including not only purchase but also search behaviour has led firms to revise their price discrimination strategies, and has contemporaneously opened exciting research avenues for empirical economists.

This Special Section on *Consumer Search* puts together a group of recent papers each touching upon a new direction of research in the consumer search literature. The papers are heterogeneous but the common thread is that modelling consumer search explicitly can lead to a better understanding of the working of markets, sometimes challenging conventional wisdom. More often than not, there are also important lessons to learn for policy.

In the paper “Consumer Search on The Internet”, De los Santos explores one of the first datasets providing information on consumer search. In particular, he studies search patterns for consumers buying books online during 2002 and 2004. One important finding

<sup>1</sup> Stigler, George J.: “The Economics of Information,” *The Journal of Political Economy* 69, pp. 213–225, 1961.

is that consumers search relatively little: the average buyer performs around 1.2 searches. De los Santos also points out that the distribution of searches is quite unequally divided across firms, with a strong bias towards some firms, in this case for the major book sellers Amazon and Barnes & Noble. His paper motivates the idea that search is often directed and that models need to be adapted to capture this feature of markets.

Ding and Zhang's paper, "Price-Directed Consumer Search", is one of the earliest papers in which consumers' search order can be influenced by the prices the firms charge. To do so, they cleverly modify the famous Stahl's (1989)<sup>2</sup> shopper and non-shopper model by introducing product differentiation. They show that non-shoppers will not search at firms charging prices higher than a limit price that decreases in search costs. They derive an equilibrium in mixed strategies and show that it may have a non-convex support, with an interval of low prices and an interval of high prices. In contrast to conventional wisdom, the average price in the market can decrease as the search cost goes up.

Common sense, recently corroborated by some theoretical and empirical research, suggests that *being first is best* when consumers search through lists of options to find a suitable alternative. In their paper "Search Prominence and Return Costs", Fishman and Lubensky explicitly account for the costs consumers have to incur to return and purchase previously inspected options to demonstrate that being first is not necessary best. Specifically, they explore the following trade-off: being inspected first is superior if it is likely that consumers find the product satisfactory because then search and return costs discourage consumers to continue search. But being inspected later is superior when consumers are likely to find the product unsuitable at the first firm because then the return costs make consumers buy the product of second firm even if it is worse than the other.

Only recently have economists started to study the implications of search frictions in a vertical relationship market. In their paper "Retail Channel Management in Consumer Search Markets", García and Janssen investigate an upstream manufacturer's incentive to price discriminate between two competing downstream retailers when consumers face search frictions. In particular, they show that provided that the manufacturer has some commitment power, it has an incentive to price discriminate because this encourages consumer search among retailers and so helps avoid the double marginalization outcome.

Parakhonyak and Titova, in their paper "Shopping Malls, Platforms and Consumer Search", apply search theory to understand how consumers navigate from platform to platform and how their navigation affects the prices firms operating in the platforms charge. They show that the most reasonable equilibrium has consumers visiting platforms in descending order of size. The firms operating in the biggest platforms charge lower prices but earn higher profits. If firms were given the option which platform to join, they would all join the same platform if entry were free. A profit-maximizing platform would limit entry and the size of the platform would likely decrease as search cost goes up.

<sup>2</sup> Stahl, Dale O.: "Oligopolistic Pricing with Sequential Consumer Search," *The American Economic Review* 79-4, pp. 700–712, 1989.

In their paper “A Search Model of Rental Markets: Who Should Pay the Commission?”, Niedermayer and Wang study the issue of whether tenants or landlords should pay the commission in rental markets. They argue that fees paid by tenants can help screen short-term and long-term tenants, which improves the match efficiency between tenants and landlords with different moving-out costs. Therefore, a policy that requires landlords to pay the commission (which was recently implemented in Germany, for example) may actually harm market efficiency.

Product returns are commonplace, especially in the case of online shopping. They encourage consumers to order a product even without perfectly knowing its value. In her paper “A Search Model of Costly Product Returns”, Petrikaitė finds that product return costs play a similar role as search costs when prices are observable. Using the recent insights from price-directed search models, Petrikaitė shows that when returns become costlier, firms will set lower prices in order to attract consumers to visit first, and, as a result, consumers can become better off.

Sequential search models with an optimal stopping rule are one way to formalize the “satisficing” idea in Simon (1955).<sup>3</sup> In reality many consumers may not carefully calculate their optimal stopping rule. Instead they may simply adopt an exogenous reservation threshold (e.g. an aspiration price in the case of price search), and the threshold might be influenced by firms’ marketing activities. In his paper “Price Competition with Satisficing Consumers”, Papi introduces this idea into a duopoly model of price competition by allowing firms to choose both prices and marketing efforts. In equilibrium firms randomize in both prices and marketing efforts and a higher marketing effort is always associated with higher prices.

These papers exemplify recent exciting research avenues concerning the Industrial Organization of markets where consumer search is a prominent feature. We hope that they will serve to inspire the IO community to continue the exploration of these markets.

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<sup>3</sup> Simon, Herbert A.: “A Behavioral Model of Rational Choice,” *Quarterly Journal of Economics*, 69-1, pp. 99–118, 1955.